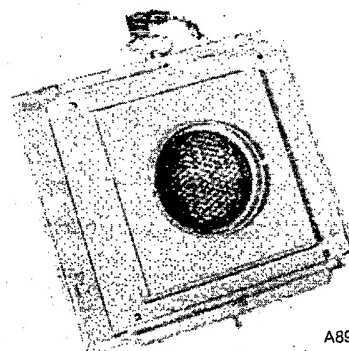




**MASTER**

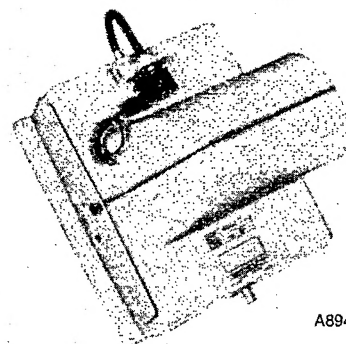


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**49BF**

**MODELS 49BF, 49BG, 49FH, 49WS**

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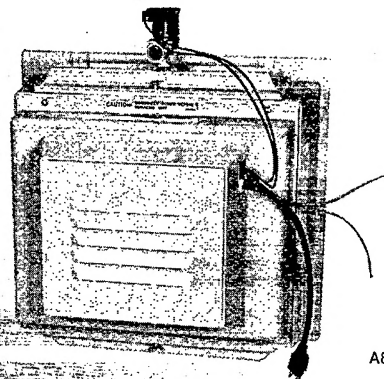


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**49BG**

# HUMIDIFIER

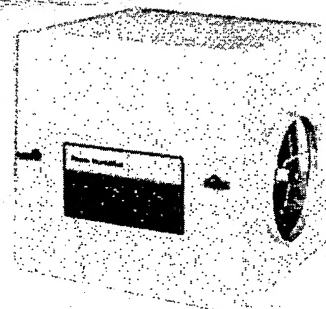
**A GUIDE TO OPERATING  
AND MAINTAINING  
YOUR HUMIDIFIER**



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**49FH**

**MASTER**



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**49WS**

**NOTE TO INSTALLER:** This manual should be left with the equipment user.

## REFRESHING MOISTURE . . . AS NATURE INTENDED

Congratulations on your excellent choice and sound investment in this addition to your home comfort system.

Your humidifier represents both the latest in engineering development and the culmination of many years of experience from one of the most reputable manufacturers of comfort systems.

Your new unit is among the most energy-efficient and reliable home humidifiers available today. To assure its dependability, spend just a few minutes with this booklet now. Learn about the operation of your humidifier and the small amount of maintenance it takes to keep it operating at peak efficiency.

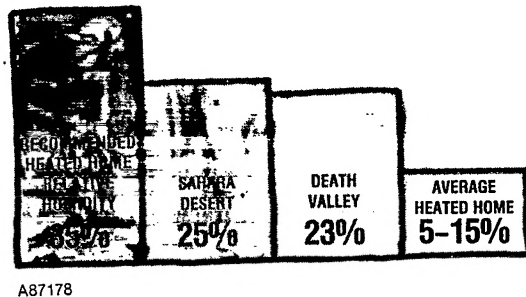
With minimal care, your humidifier will provide you and your family with moist, spring-fresh air—from season to season, and year to year.

## YOUR HOME HUMIDIFIER

### YOUR HOME CAN BE DRIER THAN DEATH VALLEY

During the heating season, your home can become uncomfortably dry. This is because cold winter air holds very little moisture. When outdoor air is warmed to average room temperature, its relative humidity falls to even lower levels. Refer to Table 1 for a comparison of the levels of relative humidity for a few sample environments.

Table 1—Relative Humidity Comparison Chart



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Parched air can cause the wood used in the construction of your house and furnishings to dry, crack, and split. Draperies and upholstery may age prematurely. Annoying static electric shock is more prevalent. Your throat, nasal passages, sinuses, and skin are more susceptible to irritating dryness. You may even have to set the thermostat higher than otherwise necessary—just to feel warm.

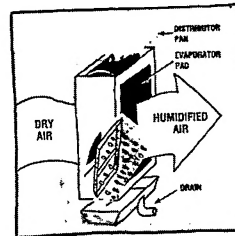
### MOISTURE MAKES A REFRESHING DIFFERENCE

Proper humidity control can alleviate problems caused by excessive dryness. Furnishings and fabrics take on a more lustrous appearance. Houseplants thrive. Static electricity is significantly reduced in a properly humidified home. Your family will breathe more easily and be relieved from the cool, drafty feeling commonly experienced in overly dry homes. The additional moisture supplied by your humidifier may enable you to reduce the temperature setting on your thermostat—without any loss of indoor comfort.

### HOW YOUR HUMIDIFIER WORKS

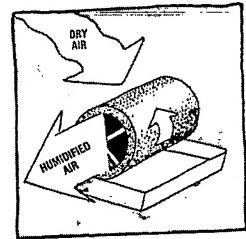
Your humidifier adds water molecules to the air inside your home. Although the rate of humidification is variable, it may exceed one-half gallon of water per hour. That's a healthy drink for a dry household. The following is a brief

description of the process: Water flows through a valve to soak the large evaporator pad. Hot, dry air from the furnace passes through the pad and absorbs the water. Then, this moisture-laden air is distributed throughout the house via the ductwork. See Figs. 1, 2, and 3.



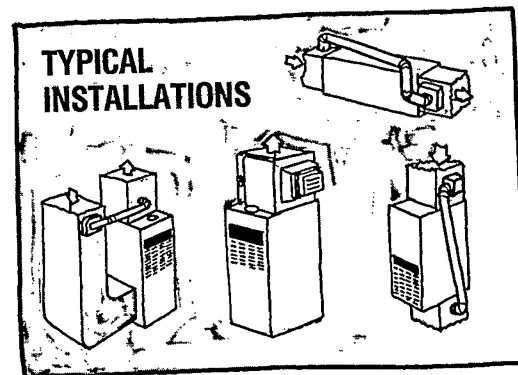
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## OPERATING YOUR HUMIDIFIER

Your new humidifier is designed to operate as part of your home heating system. It will perform at maximum efficiency if these recommendations are followed:

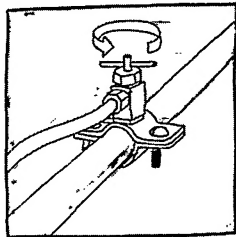
- If your humidifier is controlled by a humidistat, adjust its setting according to the outside temperature. Refer to Table 2 as a general guide. If, after several days, the air in your home seems too moist, lower the humidistat setting. Condensation on single-pane windows indicates excessive moisture. However, if the air is too dry, raise the setting. Dry throat and nasal passages indicate dry air.
- If your system does not include a humidistat, consider running the heating unit blower continuously—day and night. Uninterrupted blower operation provides for constant humidification. It may also contribute to greater personal comfort because continuous blower operation minimizes temperature differences throughout the home. Furthermore, a system equipped with an electronic air cleaner offers the added benefit of full-time air filtration.
- Supply- and return-air grilles should not be blocked. Drapes, furniture, and toys are some of the items commonly found obstructing grilles. Restricted airflow reduces the efficiency of the humidifier, as well as that of the whole comfort system.
- The humidifier unit must be properly maintained on a regular basis.

### STARTUP PROCEDURES

1. Open the saddle valve on the water supply line. See Fig. 4. Set humidistat to the desired relative humidity. See Fig. 5 and Table 2.

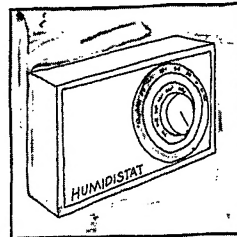
Table 2—Humidistat Settings

OUTSIDE TEMPERATURE (F°)	RECOMMENDED HUMIDISTAT SETTING (% RELATIVE HUMIDITY)
- 20	15
- 10	20
- 0	25
10	30
20	35
Above 20	40



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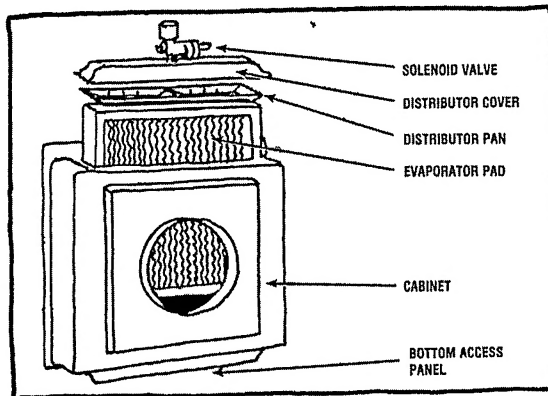
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2. Turn the furnace ON and adjust the thermostat to a high temperature setting. Be sure that the furnace blower is operating.
3. Check to see if water is flowing into the humidifier.
- If yours is a Model 49BF or Model 49FH humidifier, loosen the thumbscrew that holds the distributor cover to the top of the cabinet. Lift up the distributor cover slightly to make certain that water is flowing from the solenoid valve into the distributor pan. Do not lift the cover off the cabinet more than 1 in. when water is flowing. See Fig. 6 or 7, according to the model you own.

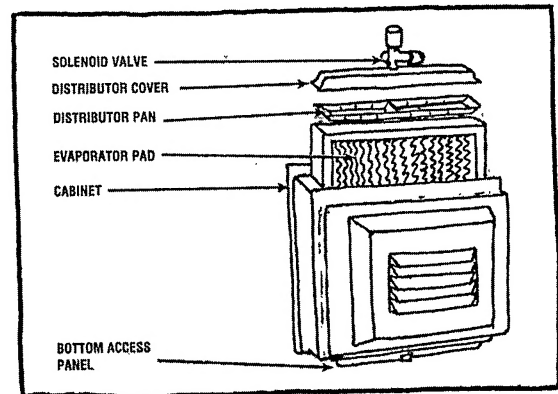


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MODEL 49BF

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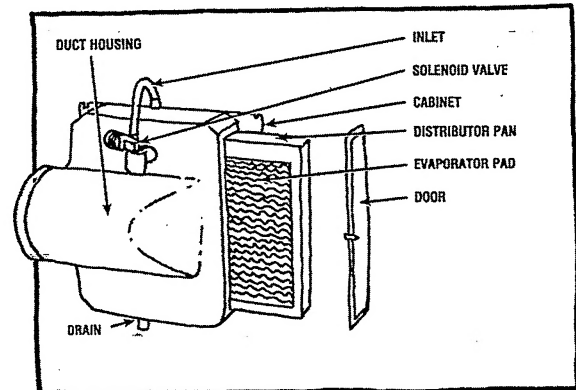
- On a Model 49BG humidifier, gently pull the latch that secures the access door. Lift the door about 1 in. Check to see if water is flowing from the solenoid valve into the distributor pan. See Fig. 8.
  - If your humidifier is a Model 49WS unit, look through the window on front of the unit to see that the evaporator pad is rotating and water is flowing. See Fig. 9.
4. Turn OFF the furnace. When the blower stops, look into the humidifier to make sure the water is not flowing into the unit.



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MODEL 49FH

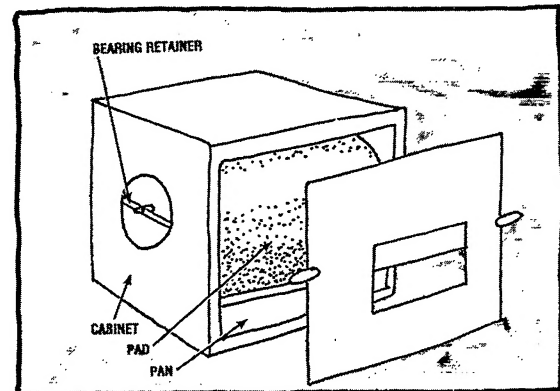
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MODEL 49BG

8



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MODEL 49WS

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**NOTE:** The Model 49WS is controlled by a float valve. Turning off the furnace will not affect the water flow until maximum heater level is achieved.

5. Replace the cover assembly and fasten securely.
6. Now, turn the furnace ON and set the thermostat for desired room temperature.

#### SHUTDOWN PROCEDURES

To shut down your humidifier, simply close the saddle valve on the water line. Then turn OFF the humidistat. When set to the OFF position, the humidistat shuts off the electrical power to the solenoid valve and/or motor on the humidifier.

**NOTE:** If your home comfort system includes cooling, be

sure the water supply to your humidifier is **turned off** during the cooling season. Close the damper located in the bypass duct if one is installed. If your humidifier is a Model 49WS, drain and clean the water pan as described under cleaning procedures.

## PERFORMING ROUTINE MAINTENANCE

With the proper maintenance and care, your humidifier will operate economically and dependably. Maintenance can be accomplished easily by referring to the following directions. However, before performing any maintenance, consider these important safety precautions:

### **⚠ WARNING**

DISCONNECT ALL ELECTRICAL POWER TO THE HUMIDIFIER AND FURNACE BEFORE PERFORMING ANY SERVICE OR MAINTENANCE. A FAILURE TO FOLLOW THIS WARNING COULD RESULT IN PERSONAL INJURY OR DEATH.

**NOTE:** THERE MAY BE MORE THAN ONE ELECTRICAL DISCONNECT SWITCH.

● **ALTHOUGH SPECIAL CARE HAS BEEN TAKEN TO MINIMIZE SHARP EDGES IN THE CONSTRUCTION OF YOUR HUMIDIFIER, BE EXTREMELY CAREFUL WHEN HANDLING PARTS OR REACHING INTO THE UNIT TO AVOID PERSONAL INJURY.**

Your humidifier has been designed for easy disassembly. This simplifies cleaning and servicing. Your unit must be kept clean to maintain its efficiency.

Regular inspection allows you to determine the cleaning schedule best suited to your humidifier's operating conditions. The frequency for required maintenance will depend most upon the available water supply. In areas where hard water and high mineral content are prevalent, a humidifier requires cleaning and servicing more often than one supplied with softer water.

At minimum, the humidifier will need to be cleaned at the beginning of every heating season.

### CLEANING PROCEDURES

#### Models 49BF, 49BG, and 49FH

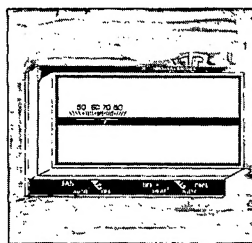
1. Turn OFF all electrical power to the humidifier and furnace. See Fig. 11.
2. Turn OFF the humidifier's water supply. See Fig. 4.
3. Disassemble the humidifier. See Figs. 6, 7, and 8.

● If yours is a Model 49BG Humidifier, gently pull the latch that secures the access door. Remove the door and slide the evaporator pad assembly out of the unit. See Fig. 8.

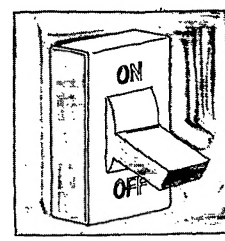
● To disassemble either a Model 49BF or Model 49FH Humidifier, first remove the water supply connection to the solenoid valve. Next, remove the screw that holds the distributor cover to the cabinet. Lift off the cover. Then, disconnect the drain line from the sump and loosen the thumb-screw(s) holding the sump to the cabinet. Remove the sump. Remove evaporator pad assembly. Again, see Fig. 6 or 7, according to the model you own.

4. Clean the internal and external humidifier cabinet components.

● If yours is a Model 49BG Humidifier, wash the access door and outlet drain portion of the cabinet. Make sure the drain is open.



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● If your humidifier is a Model 49BF or 49FH, wash the distributor cover, sump cover, and cabinet. Be sure the inlet ports are open and clean. Then, clean the sump with a solution of detergent and water.

5. Clean the internal components of your humidifier. Wash the distributor pan with a mild detergent and warm water. Be sure holes and slots in the pan are clean and unobstructed. If the pad is covered by a heavy deposit of scale, or if the local water supply has high sulfate content, replace the pad with a new one.
6. Reassemble your humidifier.
7. Turn ON the electrical power and water supplies. Refer to the Startup Procedures listed on page 2.

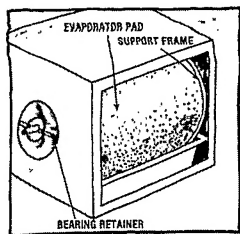
#### Model 49WS

1. Turn OFF all electrical power to the humidifier and furnace. See Fig. 11.
2. Turn OFF the humidifier's water supply. See Fig. 4.
3. Drain water from the unit. Place a pail underneath the drain plug located on the bottom of the humidifier cabinet. Lift the tab on the drain plug and remove the plug. Allow all water to drain from the unit. See Fig. 15.
4. Remove the front door from the humidifier. Rotate the latches one-half turn, then pull the door forward. See Fig. 9.
5. Remove and inspect the evaporator pad assembly. Lift the bearing from its retainer. See Fig. 12. Pull the assembly away from the motor to disengage the assembly shaft from the motor coupling. Rotate the evaporator pad assembly 90 degrees and remove it through the access opening. See Fig. 13.

Inspect the evaporator pad. If the pad is heavily loaded with scale, replace the pad. To replace the pad, pull or cut the old pad from its frame. Pull the new evaporator pad onto the support frame until the pad is located between the ends of the drum.

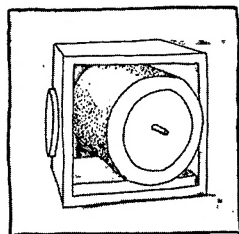
**NOTE:** For best performance, the evaporator pad should be replaced before each heating season.

6. Inspect the float assembly. Remove the float arm from the valve body by sliding out the pin and lifting off the float arm. See Fig. 14. Inspect the rubber valve seat located inside the float arm. If the seat appears to be nicked or worn, invert the seat or replace it with the spare valve seat located on the float arm. Inspect the water opening in the valve body. If the opening is clogged, use a pin to remove the obstruction. Remove any accumulated deposits from the valve body and float arm.



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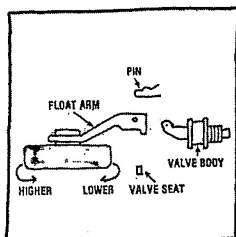
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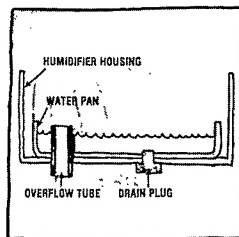
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7. Clean the water pan and unit cabinet. Tilt the water pan and lift it from the unit. Wash the pan with warm, soapy water. Flex the pan to loosen accumulated scale. Wash the unit interior, removing any accumulated deposits. Inspect the overflow line to ensure that no blockage has occurred. Clean as required. See Fig. 15.
8. Reassemble your Model 49WS Humidifier. Reinsert the water pan and drain plug. Ensure that the overflow tube is inserted into the hole at the bottom of the cabinet. Attach the float arm to the valve body by aligning the holes on both parts and reinserting the pin. *Do not force or bend the pin.* The float arm should have free up-and-down movement. Install the evaporator pad



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assembly. Ensure that the square shaft engages the motor coupling and that the bearing washer is located inside the bearing retainer. Turn the water ON. Adjust float by rotating until water covers inside of foam drum. Attach the access door and turn the latches.

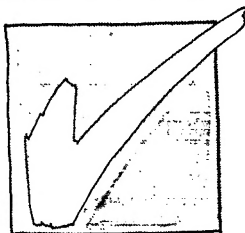
9. Turn ON electrical power supplies. Refer to startup procedures listed on pages 2 and 3.

### BEFORE YOU REQUEST A "SERVICE CALL" BEFORE YOU CALL FOR SERVICE, CHECK FOR THESE EASILY SOLVED PROBLEMS:

- Check the main power disconnect switch. Verify that the circuit breakers are ON or that fuses have not blown. If you must reset breakers or replace fuses, do so only once. Contact your servicing dealer for assistance if the breakers trip or the fuses blow a second time.

- If the humidity level is too low, check the humidistat setting. Check that the saddle valve is turned ON. Check the evaporator pad, and clean or replace the pad as necessary. Check water level in 49WS.

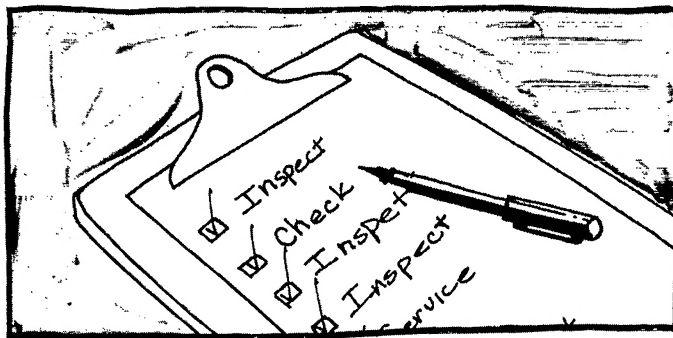
- Check for sufficient airflow. Check the furnace filter or electronic air cleaner for excessive accumulations of dirt. Check for blocked return- or supply-air grilles. Be sure grilles are open and unobstructed.



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- If water drips from the humidifier, check the drain hose for kinks or obstructions. If your unit is a Model 49WS, dripping may indicate that the float valve needs adjustment.

If your humidifier fails to operate properly, contact your servicing dealer for troubleshooting and repairs. State the model and serial numbers of your equipment (these numbers should be recorded on page 6 of this booklet.) Specify the apparent problem. With this information, your dealer may be able to offer helpful suggestions over the phone, or save valuable time through knowledgeable preparation for the service call.



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### REGULAR DEALER MAINTENANCE

In addition to the routine maintenance that you perform, your humidifier should be inspected regularly by a properly trained service technician. The inspection (preferably each year, but at least every other year) should include the following:

- Routine inspection of the humidifier. Cleaning, if necessary. Cleaning or replacement of the evaporator pad as required.
- A check of all electrical wiring and connections.
- A check of water connections to the unit.
- Operational check of the complete comfort system to determine actual working condition. Necessary repair and/or adjustment should be performed at this time.

Your servicing dealer may offer an economical service contract that covers seasonal inspections. Ask for further details.

Record the model and serial numbers of your new humidifier in the following spaces. This information, along with the other ready-reference facts requested below, may be required if you should ever need information or service.

Model No. \_\_\_\_\_

Serial No. \_\_\_\_\_

Date Installed \_\_\_\_\_

Dealer Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_ Zip \_\_\_\_\_

Telephone \_\_\_\_\_



# CARRIER CORPORATION



## IF YOUR UNIT DOES NOT WORK, FOLLOW THESE STEPS IN ORDER:

- FIRST:** Contact the installer. You may find his name on the product or in your User's Manual. If his name is not known, call your builder if yours is a new residence.
- SECOND:** Contact the nearest distributor. (See telephone yellow pages.)
- THIRD:** Contact:  
CARRIER CORPORATION  
Consumer Relations Department  
Carrier Parkway  
P.O. Box 4808  
Syracuse, New York 13221  
Telephone: 1-800-CARRIER (227-7437)  
From Canada: 1-315-432-7885

Model No. \_\_\_\_\_ Unit Serial No. \_\_\_\_\_  
Date of Installation \_\_\_\_\_ Installed by \_\_\_\_\_  
Name of Owner \_\_\_\_\_ Address of Installation \_\_\_\_\_

## Carrier Corporation Standard Product Limited Warranty



**ONE-YEAR WARRANTY**—This CARRIER product is warranted to be free from defects in material and workmanship under normal use and maintenance for a period of one year from the date of original installation whether or not actual use begins on that date. A new or remanufactured part to replace any defective part will be provided at Carrier's sole option without charge for the part itself: PROVIDED the defective part is returned to our distributor. This warranty applies only to the product in its original installation location and is voided if the product is reinstalled elsewhere.

**THIS WARRANTY DOES NOT INCLUDE LABOR** or other costs incurred for diagnosing, repairing, removing, installing, shipping, servicing or handling of either defective parts or replacement parts. **SUCH COSTS MAY BE COVERED BY a separate warranty provided by the installer.**

**EXTENDED 4-YEAR WARRANTY ON ELECTRICAL COMPONENTS**—During the second through fifth years after the date of original installation, the Carrier further warrants the electrical components against defects in material or workmanship under normal use and maintenance. A new or remanufactured part, at the Carrier's sole option, will be provided under the same conditions as stated in the ONE-YEAR WARRANTY.

**THESE EXTENDED WARRANTIES DO NOT INCLUDE LABOR OR OTHER COSTS** incurred for diagnosing, repairing, removing, installing, shipping, servicing or handling of either defective parts or replacement parts.

**THESE WARRANTIES APPLY ONLY TO PRODUCTS IN THEIR ORIGINAL INSTALLATION LOCATION AND BECOME VOID UPON REINSTALLATION.**

**LIMITATIONS OF WARRANTIES**—ALL IMPLIED WARRANTIES (INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY) ARE HEREBY LIMITED IN DURATION TO THE PERIOD FOR WHICH THE LIMITED WARRANTY IS GIVEN. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE MAY NOT APPLY TO YOU. THE EXPRESSED WARRANTIES MADE IN THIS WARRANTY ARE EXCLUSIVE AND

MAY NOT BE ALTERED, ENLARGED, OR CHANGED BY ANY DISTRIBUTOR, DEALER, OR OTHER PERSON WHATSOEVER.

ALL WORK UNDER THE TERMS OF THIS WARRANTY SHALL BE PERFORMED DURING NORMAL WORKING HOURS. ALL REPLACEMENT PARTS, WHETHER NEW OR REMANUFACTURED, ASSUME AS THEIR WARRANTY PERIOD ONLY THE REMAINING TIME PERIOD OF THIS WARRANTY.

### CARRIER WILL NOT BE RESPONSIBLE FOR:

1. Normal maintenance as outlined in the installation and servicing instructions or owner's manual including coil cleaning, filter cleaning and/or replacement and lubrication.
2. Damage or repairs required as a consequence of faulty installation, or application by others.
3. Failure to start due to voltage conditions, blown fuses, open circuit breakers or other damages due to the inadequacy or interruption of electrical service.
4. Damage or repairs needed as a consequence of any misapplication, abuse, improper servicing, unauthorized alteration or improper operation.
5. Damage as a result of floods, winds, fires, lightning, accidents, corrosive environments or other conditions beyond the control of CARRIER.
6. Parts not supplied or designated by CARRIER.
7. CARRIER products installed outside the continental U.S.A., Alaska, Hawaii and Canada.
8. Electricity or fuel costs or increases in electricity or fuel costs from any reason whatsoever including additional or unusual use of supplemental electric heat.
9. ANY SPECIAL INDIRECT OR CONSEQUENTIAL PROPERTY OR COMMERCIAL DAMAGE OF ANY NATURE WHATSOEVER. Some states do not allow the exclusion of incidental or consequential damages, so the above limitation may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.



TO OBTAIN INFORMATION ON PARTS: Consult your installing dealer or classified section of your local telephone directory under the "Heating Equipment" or "Air Conditioning Contractors & Systems" headings for dealer listing by brand name. Have available the Model No., Series Letter & Serial No. of your equipment to insure correct replacement part.

**Carrier Corporation • Syracuse, New York 13221**

Manufacturer reserves the right to discontinue, or change at any time, specifications or designs without notice and without incurring obligations.